

IN THE CLAIMS:

Please amend claims as follows.

1. (currently amended) A magnetic powder composed primarily of Fe that has been surface-treated with a silane coupling agent, which magnetic powder is made up of acicular particles and is characterized in that:

it contains

Co such that Co/Fe expressed in atomic percent is 20 – 50 at.%,

Al such that Al/Fe expressed in atomic percent is 5 – 30 at.%, and

one or more rare earth elements R (including Y) such that R/Fe expressed in atomic percent is 4 – 20 at.%,

and has

average particle diameter of smaller than 80 nm,

TAP density of 0.7 g/cm³ or greater,

ignition point of 165 °C or higher, [[and]]

oxygen content of 26 wt% or less, and

satisfies the relation of Formula 1 below between its coercive force and particle volume:

Formula 1 : $H_c \geq 325 \times \ln(V) - 900$,

where, in Formula 1, H_c represents coercive force (Oe) and V represents particle volume (nm³) calculated from a transmission electron micrograph.

2. (currently amended) A magnetic powder composed primarily of Fe, which is a magnetic powder that is made up of acicular particles and is for a coating-type magnetic recording medium that:

has

a particle volume (V) calculated from a transmission electron micrograph of not less than 1000 nm³ and not greater than 15000 nm³,

contains

Si such that Si/Fe expressed in atomic percent is 0.1 – 10 at.%, and

C such that C/Fe expressed in atomic percent is 0.5 – 40 at.%,

and has

oxygen content of 26 wt% or less

TAP density of 0.7 g/cm³ or greater,

ignition point of 165 °C or higher,

$\Delta\sigma_s$ (amount of change (%)) in saturation magnetization value σ_s during storage for seven days under constant temperature and humidity at a temperature of 60 °C and relative humidity of 90%) of 20% or less, and

saturation magnetization value σ_s of less than 140 emu/g,

and satisfies

the relation of Formula 1 below between its coercive force and particle volume:

Formula 1 : $H_c \geq 325 \times \ln(V) - 900$,

where, in Formula 1, H_c represents coercive force (Oe) and V represents particle volume (nm³) calculated from a transmission electron micrograph.

3. (original) A magnetic powder according to claim 2, which satisfies the relationship of Formula 2 between its $\Delta\sigma$ and particle volume (V) and satisfies the relationship of Formula 3 between its oxygen content and particle volume (V):

Formula 2 : $\Delta\sigma_s \leq -7.8 \times \ln(V) + 94$,

Formula 3: Oxygen content $\leq -4.2 \times \ln(V) + 55$.

4. (previously presented) A magnetic powder according to claim 2, which is composed of acicular iron alloy magnetic particles whose:

specific surface area by BET method is 60 m²/g or greater,

average major axis length is 20 – 80 nm,

Co content is such that Co/Fe expressed in atomic percent is 20 – 50 at.%,

Al content is such that Al/Fe expressed in atomic percent is 5 – 30 at.%, and

rare earth element R content including Y is such that R/Fe expressed in atomic percent is 4 – 20 at.%.

5. (previously presented) A magnetic powder according to claim 1, wherein the shape of the particles is flat acicular.
6. (previously presented) A magnetic powder according to claim 1, whose magnetic powder sedimentation rate is 1 cm / 5 hr or less when 3 g of the powder is dispersed in 500 mL of toluene and left to stand.
7. (previously presented) A magnetic powder according to claim 1, whose vinyl chloride (MR-110) adsorption amount is 0.6 mg/m² or greater and whose urethane (UR-8200) adsorption amount is 1.1 mg/m² or greater.
8. (previously presented) A magnetic powder according to claim 1, whose tape ΔB_m (amount of change (%)) in B_m during storage for seven days under constant temperature and humidity at a temperature of 60 °C and relative humidity of 90%) is 15% or less as per a test method for evaluating tape properties.
9. (original) A magnetic powder according to claim 8, which satisfies the relationship of Formula 4 between ΔB_m and particle volume (V) of the magnetic powder:
Formula 4 : $\Delta B_m \leq -3.6 \times \ln(V) + 40.5$.
10. (previously presented) A magnetic powder according to claim 1, which, as per a test method for evaluating tape properties, satisfies:
the relationship of Formula 5 between tape H_{cx} and particle volume (V) of the magnetic powder,
the relationship of Formula 6 between tape SFD_x and particle volume (V) of the magnetic powder, and

the relationship of Formula 7 between tape SQx and particle volume (V) of the magnetic powder:

$$\text{Formula 5 : } H_{cx} \geq 630 \times \ln(V) - 3400$$

$$\text{Formula 6: } SFD_x \leq 0.2 + 506 V^{0.79}$$

$$\text{Formula 7 : } SQ_x \geq 0.065 \ln(V) + 0.15.$$

11. (currently amended) A method of surface treating a magnetic powder made up of acicular particles and characterized in that, in surface treating particle surfaces of a magnetic powder composed primarily of iron with a silane coupling agent, the magnetic powder and the silane coupling agent are reacted in an organic medium under a nonoxidizing atmosphere and in a state of dispersion up to where the degree of dispersion β according to the formula below becomes 10 or less:

Degree of dispersion $\beta = D_{floc}$ (particle average volume in solvent by dynamic light scattering) / D_{TEM} (particle average volume observed by a transmission electron microscope).

12. (original) A surface treating method according to claim 11, wherein the magnetic powder is composed of particles on whose surfaces is distributed hydrophilic alumina or oxide of rare earth element(s) including Y.

13. (previously presented) A coating-type magnetic recording medium having a magnetic layer obtained by dispersing the magnetic powder of claim 1 in a resin at an orientation ratio of 2.5 or greater.

14. (original) A coating-type magnetic recording medium according to claim 13, whose magnetic layer exhibits ΔB_m (amount of change (%)) in B_m during storage for seven days under constant temperature and humidity at a temperature of 60 °C and relative humidity of 90%) of 15% or less.

15. (original) A coating magnetic recording medium according to claim 13, which satisfies the relationship of Formula 4 between ΔB_m and particle volume (V) of the magnetic powder:

$$\text{Formula 4 : } \Delta B_m \leq -3.6 \times \ln (V) + 40.5.$$

16. (original) A coating magnetic recording medium according to claim 13, which satisfies:

the relationship of Formula 5 between tape H_{cx} and particle volume (V) of the magnetic layer,

the relationship of Formula 6 between tape SFD_x and particle volume (V) of the magnetic layer , and

the relationship of Formula 7 between tape SQ_x and particle volume (V) of the magnetic layer:

$$\text{Formula 5 : } H_{cx} \geq 630 \times \ln (V) - 3400$$

$$\text{Formula 6 : } SFD_x \leq 0.2 + 506 \times V^{0.79}$$

$$\text{Formula 7 : } SQ_x \geq 0.065 \times \ln(V) + 0.15.$$